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ANNUAL REPORT OF THE ROYAL BOTANIC GARDEN FOR THE YEAR 1886-87.

No. 15G, dated Calcutta, the 21st May 1887.

From—SURGEON-MAJOR G. KING, M.B., L.L.D., &c., Superintendent, Royal Botanic Garden, Calcutta,

To—The Secretary to the Government of Bengal, Financial Department.

I HAVE the honour herewith to submit the Hundredth Annual Report of the Royal Botanic Garden.

ANNUAL REPORT OF THE ROYAL BOTANIC GARDEN FOR THE YEAR 1886-87.

IT may not be inappropriate to begin the hundredth annual report of the garden by giving a brief account of its history, which is, to a very great extent, a history of Indian Botany.

1. The suggestion to form a Botanic Garden here was first made to the Government in Calcutta in June 1786, by Colonel Robert Kyd, then Superintendent of the Hon'ble Company's Dockyard at Kidderpore. The proposal was favourably entertained by the Governor-General, and its adoption was recommended to the Supreme Board in London during the same month, practical effect being given to it during the following year by the selection, as a site, of a large piece of land immediately below Colonel Kyd's private garden at Shalimar. This piece of land, besides the Botanic Garden as it is now limited, included about fifty acres which form part of the grounds of the present Engineering College. Colonel Kyd was himself an ardent horticulturist, and he had brought together in his private garden at Shalimar a large collection of exotic plants, chiefly from the Straits. He was therefore very appropriately appointed the first Superintendent of the Botanic Garden which had been founded at his suggestion. Colonel Kyd continued to perform the duties of Superintendent until his death in 1793. On Colonel Kyd's death, Government decided to put the garden under the charge of a special officer who should have no other duty. Dr. William Roxburgh, the Company's Botanist in Madras, was therefore transferred from that Presidency, and was installed at Seebpore in November 1793. No better selection than that of Dr. Roxburgh could have been made. Dr. Roxburgh, for many years prior to his transfer, had been engaged in studying the then little-known Flora of the Northern Circars in the Madras Presidency. He was a most ardent and enthusiastic botanist, and a good gardener. Dr. Roxburgh continued to be Superintendent until 1814, when he was obliged to proceed to the Cape on account of his health. From the Cape he went on to St. Helena, and from thence to England, where he died during the following year. Dr. Roxburgh was the first botanist who attempted to draw up a systematic account of the plants of India. During his busy life in this country he prepared a *Flora Indica*, which contained systematic descriptions of all the indigenous plants known to him, as well as of many exotics then in cultivation in the neighbourhood of Calcutta. The manuscript of this work he took with him when he left India, intending to publish it during his residence in England. His death prevented the execution of this plan; and, with the exception of the first volume, which was printed with some additions and interpolations by Drs. Wallich and Carey in 1820, the book remained unpublished until 1832. In the latter year it was printed, exactly as the author had left it, by the piety of his sons, Captains James and Bruce Roxburgh, neither of whom was a botanist. This book is the basis of all subsequent Indian botanical works. It is an admirable production: the descriptions are accurate and graphic, and its authorship justly entitles Roxburgh to his title of the Father of Indian Botany. Until the year 1872, when the publication of the "Flora of British India" was begun by the distinguished botanist Sir Joseph Hooker, Roxburgh's was the only single book through which a knowledge of Indian plants could be acquired. A second edition of this excellent manul was issued by Mr. C. B. Clarke in 1874 at a merely

nominal price, Mr. Calarke's desire being to put the book within the reach of the poorest student. Besides the *Flora Indica*, Roxburgh published, at the expense of the Honourable Company, in three large folio volumes, his *Plantæ Coromandelianæ*, being descriptions with figures of three hundred of the most striking plants of the Coromandel Coast. Dr. Roxburgh was immediately succeeded in the Superintendentship of the Garden by Dr. Francis Buchanan (afterwards Hamilton), who at the time was on special duty in connection with an extended enquiry into the agriculture of India and in the collection of materials for a Gazetteer. Dr. Hamilton, who was an accomplished botanist and zoologist, collected a vast mass of material, part of which was published in his own name, but the bulk of which, after many years' suppression, was published under the title of Montgomery Martin's History, Topography and Statistics of Eastern India. Dr. Buchanan-Hamilton held charge of the garden for only a short time, and he was succeeded in 1817 by Dr. Nathaniel Wallich, lately Surgeon to the Danish Settlement at Serampore. Dr. Wallich was an able and most energetic botanist; and, during the earlier part of his term of office, he organised collecting expeditions into the remote and then little known regions of Kumaon, Nepal, Silhet, Tenasserim, Penang, and Singapore Dr. Wallich in fact undertook a botanical survey of a large part of the Indian Empire. The materials (in the shape of dried specimens of plants) thus accumulated were taken by Dr. Wallich to London, and, after being named there by himself and by other botanists, they were distributed in numbered collections to the leading botanical institutions in Europe. In this great distribution, Dr. Wallich included the collections of several other botanists which had been made over to him for the purpose. The liberality with which these specimens was given away was so extreme that, in the garden report for the year 1843, we find Dr. Griffith (who had been appointed to officiate for Dr. Wallich during his absence in England) complaining that the herbarium had been completely denuded of every specimen collected during the first fifty years of the existence of the garden. Besides distributing these enormous collections, Dr. Wallich was enabled, through the munificence of the Honourable Company, to publish, under the title *Plantæ Asiaticæ Rariores*, three superb volumes illustrated by coloured figures of a high degree of excellence. Dr. Wallich retired in 1846 and died in 1854. During the lengthened absences of Dr. Wallich in Europe, his place at the garden was filled by Dr. W. Griffith, whose premature death deprived Botanical Science of one of its ablest and most industrious votaries. Dr. Griffith's extensive notes and numerous drawings were, after his death, published by Government in nine volumes. Dr. Wallich was succeeded by Dr. Hugh Falconer. Dr. Falconer was a Palæontologist, well known by his researches on the Sivalik Fossil Mammalia. In 1855 he left the country on account of ill-health, and was succeeded as Superintendent by Dr. Thomas Thomson, a traveller and botanist of much ability, the coadjutor of Sir Joseph Hooker in the collection and distribution of an extensive and well known herbarium of East Indian plants, and the joint author of the first volume of a new *Flora Indica*. Dr. Thomson retired in 1861, and was succeeded by Dr. Thomas Anderson, whose untimely death in 1870 was caused by disease contracted during his efforts for the introduction of the quinine-yielding Cinchonas into the Sikkim Himalaya. For the two years subsequent to Dr. Anderson's departure from India, Mr. C. B. Clarke acted as Superintendent, and during his incumbency he began the series of botanical publications which has earned for him so high a scientific reputation.

2. From the first foundation of the garden, it was understood that it was to be made a source of botanical information for the possessions of the Company, and at the same time a centre to which exotic plants of economic interest could be imported for experimental cultivation, and from which, in turn, they could be issued for distribution in the Company's possessions. It was also intended to assist in introducing indigenous Indian products to new markets. It was intended that it should not only be a botanical, but also a horticultural and agricultural garden. The preceding paragraph shows how the botanical work laid out for the garden has been accomplished. But the economic side has by no means been neglected. At first, great hopes were entertained that the spices which rendered the trade of the Company with the Moluccas and other of the Malayan Islands so valuable, might be cultivated in Bengal.

The earliest efforts of Colonel Kyd were therefore directed to the introduction of the trees which yield nutmegs, cloves and cinnamon, and of the pepper vines. It was, however, speedily proved that the climate of Northern India is quite unsuited to these equatorial species. The equatorial fruits, such as mangosteen, langsat, dukko and bread-fruit, were also tried with a similar result; and so were the temperate fruits of Europe. In fact, no small part of the benefits conferred on the country by the garden in its early days was the demonstration by practical experiment that certain natural products, many of them of a most desirable kind, cannot be grown in Bengal; much money and bootless effort being thus saved to the country. The introduction of exotic timber trees also received early attention; and in the garden there still remain a few of the original mahogany trees introduced in these early years. The introduction of tea was one of the items put down in Colonel Kyd's original programme; and in the final establishment of what has now become one of the most important industries in Northern India, the garden bore a most important part. Potato growing was introduced through its agency, and the cultivation of the quinine-yielding Cinchonas of the Andes was initiated and carried to a successful issue under the direction of Superintendents of this garden. In the improvement of Indian cotton, and in the introduction both of that and of jute to the markets of Europe, the garden authorities worked cordially hand in hand with the Agri-Horticultural Society of India, with what success it is unnecessary to point out. By the introduction of some of the best kinds of sugarcane from the West Indies, and the dissemination of these to all parts of the country, a considerable improvement was effected both on the quality and quantity of the sugar crop of the country. In this matter also the Agri-Horticultural Society worked hand in hand with the garden authorities. Very soon after the establishment of the Society just mentioned, a considerable piece of land in the garden was made over to it rent-free, and on this land the Society conducted the greater part of its operations for forty years. In fact, it was not until the year 1872 that the Society's garden was transferred to its present site in Alipore. It is unnecessary to discuss in detail the numerous experiments in the cultivation of economic plants which have been conducted in the garden since its beginning. A few of the products tried may simply be mentioned. Chief among these are flax, hemp, tobacco, henbane, vanilla, coffee (Arabian and Liberian), cocoa, ipecacuanha, aloes, sarsaparilla, jalap, India-rubber, cardamoms, tapioca, and coca. As regards horticulture, it may suffice to say that a large proportion of the kinds of exotic plants now found in private gardens in India has been introduced to the country through the agency of this garden, and that the improved methods of cultivation which now obtain were to a great extent initiated here.

3. In 1820 about fifty acres of land belonging to the garden were made over by Government to the Society for the Propagation of Christian Knowledge. And on this land the Society founded the institution so long known as Bishop's College, but since 1880 (owing to its retransfer to Government) as the Government Engineering College. In the year 1864 the garden was devastated by a cyclonic storm of extraordinary violence, which either uprooted or broke to pieces the majority of the trees in it, and, by blowing down all the plant-houses, hopelessly crushed their contents. The few trees which escaped on that occasion were sadly reduced in number by a second cyclone which passed over the garden in 1867; and, at the present time, almost the only trees dating from before 1867 are the great banyan and a smaller tree of the same sort, some peepuls and country almonds, about twenty mahogany trees, and some palms. It is almost a pity that the occasion of its destruction by these cyclones was not taken to remove the garden to a site on the Calcutta side of the Hooghly. For, although there are certain advantages in the garden being so remote from the town, there can be little doubt that the balance is in favour of a site more easily accessible to the residents of Calcutta. The destruction of all shade, which resulted from the removal of the trees, allowed the inveterate weed known popularly as ooloo grass and botanically as *Imperata cylindrica* to take possession of the whole of the ground not occupied by roads or flower borders; so that when I took charge of the garden in 1871 it presented rather a sorry appearance. The liberality of the local Government, under whose control it soon thereafter passed, has made it possible for me to lay out the garden entirely anew.

The whole of its area has since that date been treated for landscape effects, sheets of ornamental water having been formed, and, with the earth so obtained, undulations having been thrown up. New roads and footpaths have also been made; a building for the Herbarium and three handsome conservatories for the more delicate kinds of living plants have been erected; nursery buildings have been put up; and the garden staff have been furnished with comfortable houses.

4. Botanically the most important feature in the garden is its Herbarium, or collection of dried plants. As has already been explained, all the collections prior to Dr. Wallich's visit to England in 1828 were distributed by him to scientific institutions abroad. The commencement of the present collection dates, therefore, from his return to India in 1832. It consists of plants contributed by almost every worker at Botany in India since that date, and of considerable contributions from Botanists in Europe. It is first and foremost an Indian Herbarium, but the plants of South-Eastern Asia, of Japan, of Persia and of Asia Minor are fairly well represented. Those of Europe also excellently represented; but in African and American plants the collection is comparatively poor. Constant communication and interchange of specimens have been kept up for the last fifty years with the great national collection at Kew; and to the distinguished Directors of that institution, Sir William Hooker and his son and successor Sir Joseph, the Calcutta Herbarium is indebted for invaluable contributions. Interchanges have also been kept up with other European Botanic Institutions, such as the Herbarium of the British Museum, of the *Jardin des Plantes*, Paris, the Imperial Gardens at St. Petersburg and Berlin, the Royal Botanic Gardens at Buitenzorg in Java, at Peradeniya in Ceylon, and at Saharanpore; and with many other institutions. Amongst the private contributors in past times from whom the Herbarium has received the most valuable collections must be mentioned Vicary, Edgeworth, Griffith, Wight, Simons, Law, Gibson, Stocks, Dulzell, Kurz, Miquel, and Maingay. The most important contributions received during recent years have been duly mentioned in my annual reports.

5. The year which ended on 31st March last presented little of novelty. No new works were undertaken in the garden, and the time of the staff was occupied in the ordinary routine of cultivation. The show of orchids was unusually fine, and the general condition of the plants, both in the conservatories and out of doors, was satisfactory.

6. The collection of dried plants received several valuable additions during the year. Chief amongst these was a set of the plants collected by Dr. Aitchison during the Afghan Boundary Commission. Dr. Aitchison's collections were taken by himself direct to Kew, whence, after having been named and numbered, a set was issued to Calcutta. From Kew were also received a named set of plants collected by Dr. Giles during the Gilgit Expedition; and a quantity of plants collected some years ago by Dr. G. Watt while he was on duty with the Commission appointed to settle the boundary between Munipur and Burmah. From Kew were also received a quantity of interesting specimens made by various collectors in the Malayan Peninsula, in Singapore and in Penang. For all these contributions from Kew we are indebted to the good offices of Mr. Thiselton Dyer, its present distinguished Director. Dr. Regel, of the Imperial Garden, St. Petersburg, presented a large number of most interesting plants from the Russian possessions in Central Asia. Three excellent named collections from Natal were presented by Mr. Medley Wood of the Botanic Garden, Durban. From Mexico, Mr. Pringle sent four hundred named species; and from New Guinea Mr. H. O. Forbes forwarded a large box filled with dried plants. Of contributions received from within the limits of India, I have to acknowledge—from Sikkim a quantity of plants from Mr. G. Gammie, as also a collection made by a Bhotea employed by Mr. Pantling in the Lachen valley; from the Khasia Hills many fine things, chiefly trees, from Mr. Gustav Mann; from the Naga Hills a fine collection made during his short residence there by Dr. D. Prain, now Curator of the Herbarium; from the North-Western Himalaya some interesting plants sent Mr. J. F. Duthie, of Seharampore, and by Colonel H. Collett, C.B.; from Manbhoom a collection made by Reverend J. Campbell; and from Southern India a few most interesting plants from Mr. J. S. Gamble, Conservator of Forests.

7. During the month of November last the Herbarium was visited, for the purpose of study, by the Reverend Father Scortechini, the Government Botanist of Perak, who had been deputed by Sir H. Low, the British Administrator of that State, to proceed to Calcutta in order to name and arrange his collections of Perak plants. It was Father Scortechini's intention to have remained here for three or four months; but unfortunately he died shortly after his arrival. During the year there was issued from the press the first part of a monograph of Indo-Malayan species of *Ficus*, in which I have been engaged for some time.

8. I have to acknowledge, with thanks, the assistance freely afforded whenever asked, by the Indian Assistant in the Kew Herbarium, Mr. W. Botting Hemsley. Mr. Hemsley, with the permission of the Director, Mr. Thiselton Dyer, is always ready to settle any knotty point in nomenclature, or to check any doubtful identification—a kind of work that can only be done with accuracy in a perfectly equipped Herbarium like that of Kew.

9. The interchange and distribution of plants and seeds has gone on actively during the year. Of plants, 8,064 were received against 46,104 given out. Of seeds, 903 packets were received and 2,534 distributed. The names of all donors and recipients will be found in the appendices to this report.

10. The Lloyd Botanic Garden at Darjeeling has during the year been under the charge of Mr. W. Kennedy. And the Municipality having agreed to continue the vegetable garden which lies wedged in between the Botanic Garden and the grounds of the Sanitarium, that garden also has been under Mr. Kennedy's care. At one time the Municipality threatened to convert the vegetable garden into bazar; at another they resolved to turn it into a washing-place for the dhobies of the station. Its maintenance as a sightly spot is a matter which concerns not only the Municipality, but the visitors who frequent Darjeeling and the patients in the Sanitarium. It is well, therefore, that both these proposals have, for a time at least, been shelved. I regret to have to report that the acclimatised English potatoes turned out badly, the produce having been tasteless and waxy. This was also the experience of private growers.

11. The budget allotments of both the Calcutta and Darjeeling gardens were spent in full. At Calcutta Rs. 1,373 were realised by the sale of surplus plants, and at Darjeeling, from the sale of garden produce of sorts, Rs. 1,180 were collected as against Rs. 741 last year.

12. In May last Mr. L. J K. Brace, Curator of the Herbarium, retired from the service of Government, and Surgeon D. Prain, of the Indian Medical Service, was appointed in his stead. Owing, however, to the exigencies of military service, Dr. Prain was not able to join his appointment until 24th January last; and during the interval the Herbarium work devolved upon myself. Dr. Prain had on a previous occasion officiated for Mr. Brace, and had shown himself to be a highly competent man. Mr. W. McHardy, from the Royal Garden, Kew, having been appointed to the post of Assistant Curator, vacated by promotion of Mr. H. Bahr, joined on 15th June 1886. He has worked well. Messrs. Bahr and Kennedy have also conducted their respective duties in a satisfactory manner.

13. The usual returns, four in number, are appended.

APPENDIX I.

Statement showing plants received from 1st April 1886 to 31st March 1887.

From whom received.	Wardian cases.	Boxes.	Number of plants.
Royal Garden, Kew, London	2	.....	60
Botanic Garden, Durban, Natal	1	1	28
Ditto, Hong-Kong	3	... ..	46
Lloyd Botanic Garden, Darjeeling	.....	6	246
Government Agri-Horticultural Garden, Lahore	.....	4	77
Agri-Horticultural Society, Calcutta	.....	.....	158
Horticultural Garden, Lucknow	.....	1	1
Zoological Garden, Calcutta	... ..	.....	36
Eden Garden, Calcutta	.....	.....	24
W. Bull, Esq., London	2	.....	71
W. G. Head, Esq , Crystal Palace, London	1	.....	66
Messrs. James Veitch and Sons, Chelsea	1	.....	43
J. Gammie, Esq., Mungpoo	.....	7	417
Chemical Examiner, Calcutta	.....	1	1
T. C. Anderson, Esq., Ceylon	1	.....	144
S. T. Apcar, Esq., Garden Reach	.....	.....	3
E. T. Atkinson, Esq., Calcutta	.....	.....	2
G. W. Bartlett, Esq., ditto	.....	.....	429
H. G. Batten, Esq , Sandoway, Burmah	.....	.....	105
L. J. K. Brace, Esq.	.....	.....	1
C. B. Clarke, Esq.	.....	.....	52
Reverend J. Campbell, Pokhuriah	.....	.....	44
C. Creagh, Esq., Assistant Resident, Laroot . ..	6	.....	130
Director of Agriculture, Assam	.....	1	20
Deputy Conservator of Forests, Chittagong	.....	1	19
J. H. Gilbert, Esq., Rangoon	.....	4	244
J. S. Gamble, Esq., Madras	.....	.....	34
A. O. Hume, Esq., C.B., Simla	.....	.....	24
Miss. E. Harwood, Calcutta	.....	.....	6
W. Kilby, Esq., Rungpore	.....	.....	4
S. J. Kilby, Esq., Calcutta	.....	3	38
G. Mann, Esq., Shillong	.....	1	1,848
E. H. Man, Esq., Andamans	2	4	259
R. W .S. Mitchell, Esq., Garden Reach	.....	.....	2
Colonel Perreau, Calcutta	.....	1	229
G. McD. Peche, Esq., Moulmein	2	3	338
J. Parkes, Esq , Sikkim	.....	12	396
Dr. J. G. Pilcher, Howrah	.....	.....	4
Dr. T. J. Rowell, Singapore	.....	.....	1
W. Stalkartt, Esq., Ghoossery	.....	.....	133
Captain Sanders, S. S. *Rajputana*	.....	2	4
Collected by the Superintendent in Darjeeling	.....	.....	38
Ditto Dr. Prain, Kohima	.....	1	11
Ditto Herr H. H. Kunstler, Penang	13	1	618
Ditto Badul Khan, Plant Collector, Chittagong ...	.....	7	436
Babu P. C. Sein, Seebpore	.....	.....	67
„ S. P. Chatterjee, Calcutta	.....	.....	28
Haree Malee, Nurseryman, Manicktollah	... .	.....	922
Shaik Jomeeruddy Malee, Thanamakuah	.....	.....	2
W. A. Kennedy, Esq., Darjeeling	.....	.....	92
Unknown donor	....	1	12
Ditto ditto	1	2	51
Total ...	35	64	8,064

APPENDIX II.

Statement showing plants sent out from 1st April 1886 to 31st March 1887.

To whom sent.	Wardian cases.	Boxes.	Number of plants.
Her Excellency Lady Dufferin, Calcutta	.....	.....	12
Government House Garden, Calcutta	.....	.....	108
Royal Garden, Kew, London	5	2	563
Botanic Garden, Hong-Kong	3	1	278
Ditto, George Town, Demerara	5	.....	208
Ditto, Singapore	4	.....	280
Ditto, Ootacamund	.....	1	58
Ditto, Saharanpore	.....	4	228
Ditto, Darjeeling	.....	3	84
Jardin des Plantes, Paris	1	.....	32
Horticultural Garden, Nagpur	.....	.....	18
Government Garden, Laroot	2	.....	58
Eden Garden, Calcutta	.....	.....	38
Zoological Garden, Calcutta	.....	.....	159
Public Garden, Pachmarhi	.....	1	12
Government Agri-Horticultural Garden, Lahore	.....	30	595
Agri-Horticultural Society's Garden, Calcutta	.....	1	65
Indian Museum, Calcutta	.....	.....	29
William Bull, Esq., F.L.S., Chelsea, London	1	.....	24
Sir Charles Elliot, K.C.S.I.	.....	1	69
Lord Crewe of Crewe	.....	1	81
Lady Rosebery	1	.....	42
W. G. Head, Esq., Crystal Palace, London	1	.....	44
Conservator of Forests, Assam	.....	2	101
Deputy Conservator of Forests, Assam	.....	1	20
Ditto, Orissa Division	.....	9	1,000
Assistant Superintendent of Forests, Penang	1	.....	24
Commissioner of Patna	.....	12	300
Deputy Commissioner, Dhubri	.....	12	240
Ditto, Gurdaspur	.....	2	18
Port Commissioners, Calcutta	.....	.....	824
Collector of Cuttack	.....	1	12
Cantonment Magistrate, Baraset	.....	.....	135
Officiating Ditto, Dum-Dum	.....	.....	120
Chairman, District Road Committee, Sarun	.....	3	150
Ditto, Serampore Municipality	.....	.....	100
Suburban Municipality, Alipore	.....	28	2,000
Secretary and Engineer, Akyab Municipality	.....	4	37
Chief Engineer, East Indian Railway, Howrah	.....	2	1,272
Executive Engineer, Arrah Division	.....	18	360
Ditto, 2nd Calcutta Division	.....	.....	6
Ditto, Calcutta	.....	.....	150
District ditto, Motihari, Tirhoot	...	32	2,000
Do. ditto, East Indian Railway, Howrah ...	.....	.....	1,550
Do. ditto, Pubna	.....	2	50
Do. ditto, Shahabad	.....	3	200
Do. ditto, Behar	.....	6	500
Do. ditto, Futwa	.....	7	500
Do. ditto, Behta, Dinagepur	.....	11	1,000
Sub-Overseer, Mokameh and Barrh	.....	10	1,000
Sub-Divisional Officer, Aliporo, Western Duars	.....	8	100
Superintendent, Gunpowder Factory, Cossipore	.....	.....	200
Ditto, ditto, Ishapur	.....	.....	620
Ditto, Brick Factory, Akra	.....	.....	150
Ditto, Amwary Factory, Kajra	.....	3	200
Ditto, Kanti Factory, Tirhoot	.....	3	170
Ditto, Jail, Midnapore	.....	.....	100
Ditto, do., Burrisal	.....	2	50
Ditto, do., Alipore	.....	.....	155
Ditto, Presidency Jail, Calcutta	.....	.....	641
Ditto, Durbhunga Raj Garden	.....	7	1,308
Ditto, Public Works Department, Tonk Estate ...	.....	5	110
Officiating Master of the Mint, Calcutta	.....	.....	1,356

APPENDIX II—*continued.*

To whom sent.	Wardian cases.	Boxes.	Number of plants.
Transport Officer, Calcutta	.....	.....	500
Port Officer, Calcutta	.....	.....	84
Inspector, Eastern Bengal State Railway	....	.....	205
Chemical Examiner, Medical College, Calcutta	.....	.....	300
Managing Agent, Alipore Coal Company, Limited ...	.....	3	50
Manager, Government Estates, Joypur Haut	.....	1	20
Ditto, ditto, Khasmahals	.....	7	130
Ditto, Baron's Tea Estate, Julpigoree	.....	5	111
Ditto, Bengal Silk Company Limited, Azimgunge ...	.....	4	42
Ditto, His Highness the Maharajah of Burdwan's garden	.....	13	285
Ditto, Bhootan Estate Association, Siliguri	.....	1	20
Assistant Manager, Hutwa Raj	.....	4	89
Government High School, Rangoon	.....	1	18
La Martiniere School, Calcutta	.....	.....	22
Outram Institute, Dum-Dum	.....	.....	600
St. Vincent's Home, Kidderpore	.....	.....	55
Zenana Mission, Calcutta	.....	.....	249
Baptist Mission, ditto	.....	.....	550
Church of England Mission, Calcutta	.....	.....	104
The Portuguese Mission in Bengal	.....	.....	122
General Hospital, Calcutta	.....	.....	118
Ditto, Howrah	.....	1	12
Eden Hospital, Calcutta	.....	...	1,050
Commissary of Ordnance, Calcutta	.....	.....	652
Suez Canal Stations, Egypt	.....	10	300
Hon'ble Sir C. Petheram, Calcutta	.....	.....	10
" H. Beverley, Calcutta	.....	.....	57
" H. A. Cockerell, ditto	.....	.....	8
" C. B. Garrett ditto	.....	...	66
" W. S. Whiteside, Madras	1	.....	69
—— Atkins, Esq.	.....	.....	4
H. Arbuthnot, Esq., Assensole	.....	.....	29
A. B. Antram, Esq., Calcutta (for Cathedral)	.....	.....	406
C. A. B. Anderson, Esq., Assam	.....	4	58
G. Alexander, Esq., Seebpore	.....	...	34
S T. Apcar, Esq., Garden Reach	.....	.....	60
Miss Allen, Ballygunge	.....	.....	2
Reverend A. Bruske, Ranchee	.....	3	50
" O. Berg, Rampore Haut	.....	4	85
" T. Bunckholdt, ditto	.....	3	46
" H. P. Boerresen, ditto	.....	9	147
" F. T. Cole, Rajmahal	.....	3	48
" Kiefel, Giridi	.....	9	157
" C. Molet, Ranchee	.....	15	246
" W. Smith, Calcutta	.....	.....	91
H. G. W. Batten, Esq., Sandoway	.....	2	56
G. W. Bartlett, Esq, Calcutta	.....	.....	33
E. D. Bolst, Esq., do.	.....	.....	9
R. Bellety, Esq, Ballygunge	.....	.....	7
H. Beadon, Esq., Dinagepur	.....	11	213
T. B. Curtis, Esq., Darjeeling	.....	7	84
J. G Charles, Esq., Alipore	.....	.....	8
Dr. D. D. Cunnigham	.....	.....	12
T. A Counsel, Esq., Calcutta	.....	.....	4
Dr. J. Dyer, Pachamba	.....	3	54
A. F. Dowling, Esq., Chittagong	.....	.....	57
R Ellis, Esq, Calcutta	.....	.....	13
—— Fuller, Esq., do.	.....	.....	8
Captain Fisher, Ship *Albyn*	.....	.....	25
Chief Officer, S. S. *City of Agra*	.....	.....	8
Dr. M. Foster, Cambridge	.....	1	60
Edward Gray, Esq., Assam	.....	1	113
J. Gammie, Esq., Mungpoo	.....	1	14
Mrs. Grant, Balasore	.....	5	107
Captain J. Henderson, S. S. *Goorkha*	.....	.....	25

APPENDIX II—*continued.*

To whom sent.	Wardian cases.	Boxes.	Number of plants.
Miss. E Harwood, Calcutta	.....	3	51
Colonel Jarrett, ditto	.....	.....	14
J. Flower Jackson, Esq., London	.....	1	85
Henry J. Kowalsky, San Francisco	.....	1	150
S. J. Kilby, Esq., Calcutta, for Salt Gola compound ...	.....	.....	811
W. Kilby, Esq., Rungpore	.....	.....	29
W. Kelly, Esq., Howrah	.....	.....	14
A. F. Kielland, Esq.	.....	.....	36
Dr. Kirkman, Hastings	.....	.....	4
Mrs. Lampen, Dinapore	.....	2	50
Mrs. Lyall, Calcutta	.....	.....	95
J. Mackay, Esq., Calcutta	.....	2	35
J. Macfayden, Esq., ditto	.....	1	219
J. McPherson, Esq., ditto	.....	.....	42
E. H. Man, Esq., Andamans	2	.....	332
R. C S Mackenzie, Esq., Howrah	.....	.....	22
H. Martindell, Esq., Government Engineering College, Seebpore.	.....	.....	40
E. F. Mondy, Esq., Government Engineering College, Seebpore	.....	.....	71
Mr. Milne, Calcutta	.....	.....	13
Mrs. Nash, Darjeeling	.....	1	6
J. C. Parker, Esq., Calcutta	.....	.....	4
Colonel Perreau, ditto	.....	...	92
Dr. J. G. Pilcher, Howrah Hospital	.....	.....	265
G. McD. Peche, Esq., Moulmein	1	1	37
T. J. Rowell, Esq., M.D., Singapore	1	.....	61
J. Rocco, Esq., Calcutta	.....	.....	36
W. Stalkartt, Esq., Ghoosery	.....	.....	150
J. S. Slater, Esq., Govermnent Engineering College ...	.....	.....	22
Colonel Stanton, Simla	.....	1	12
A. Simson, Esq., Calcutta	.....	.....	216
Colonel C. Stansmore, ditto	.....	.....	3
Captain Sanders, S. S. *Rajputana*	1	.....	31
Dr. E. Sanders, Mozufferpore	.....	4	44
W. Tennon, Esq., Raneegunge	.....	.....	20
R. Turnbull, Esq., Calcutta	.....	.....	1
F. W. Tytler, Esq., Saharanpur	.....	2	60
G. Urquhart, Esq., Jalpaiguri	.....	.....	8
Sir Alexander Wilson, Calcutta	.....	.....	18
Colonel H. Ward, Bhopal	.....	3	67
A. White, Esq., Raneegunge	.....	1	1,600
Major Wace, Ordnance Department, Cossipore ...	.....	.....	146
D. Yule, Esq., Garden Reach	.....	.....	12
Messrs. Burn and Company, Howrah	.....	.....	20
„ Bird and Company, Calcutta	.....	3	100
„ Gillanders, Arbuthnot and Company, Calcutta ...	.....	4	10,000
„ Stanley Price and Company, Calcutta	.....	.....	12
H. H. the Ex-King of Oudh	.....	.....	4
H. H. the Khedive of Egypt	1	.....	30
Sooruj Deo Narayan Sing, Balegurh	.....	.....	13
Baldeo Shao, Calcutta	.....	.....	10
Roy Raghubsen, Calcutta	.....	.....	4
Rajah Madhub Chundra Giri, Tarkeshwar	.....	.....	24
„ Nohor Sing, Durmahatta	.....	.....	12
Coomar Nil Krishno Roy Bahadoor, Calcutta	.....	.....	41
M. Ghose, Esq., Calcutta	.....	.....	82
Baboo G. C. Dutta, Seebpore	.....	.....	48
„ P. C. Sein, Shibpore	.....	.....	38
„ B. B. Ghose, Taki	.....	.....	3
„ D. N. Bose, Calcutta	.....	.....	21
„ P. K. Bose, „	.....	.....	2
„ J. N. Chowdhury, Seebpore	.....	.....	4
„ K. P. Chatterjee, Durbhunga	.....	1	12
„ S. P. Chatterjee, Calcutta	.....	.....	56
„ B. K. Mullick, ditto	.....	.....	12

APPEMDIX II—*concluded.*

To whom sent.	Wardian cases	Boxes.	Number of plants.
Babu B. G. Mullick, Calcutta	.....	.....	8
„ B. N. Dutta, Howrah	.....	.....	3
„ B. R. Roy, Serampore	.....	.....	3
„ B. C. Banerjee, Ballaghur	.....	.....	3
„ K. C. Pundit, Thana Makooah	.....	.....	4
„ G. C. Doss, Gurdaspur	.....	2	16
„ H. M. Mookerjee, Seebpore	.....	.....	72
„ H. N. Paul, Garden Reach	.....	.....	2
„ H. M. Moduck, Seebpore	.....	.....	4
„ J. N. Roy, Horipal	.....	.....	30
„ K. D. Ghose, Augurparah	.....	.....	1
„ K. N. Mookerjee, Shyakhala	.....	.....	3
„ K. P. R. Chowdhoory, Seebpore	.....	.....	2
„ K. L. Burmon, Khantra	.....	.....	1
„ N. C. Paramanick, Seebpore	.....	.....	2
„ N. C. Sein, Berhampore	.....	.....	2
„ P. K. Gosswamy, Tarkeshwar	.....	1	11
„ P. C. Ghosh, Calcutta	.....	.....	1
„ R. Malleah, Howrah	.....	.....	1
„ R. L. Sircar, Calcutta	.....	.....	1
„ R. C. Dass, ditto	.....	.....	1
„ R. L. Dass, Shingoor	.....	.....	2
„ S. C. Some, Chinsurah	.....	.....	50
„ S. K. R. Chowdhoory, Seebpore	.....	.....	3
„ S. P. Sircar, ditto	.....	.....	2
„ S. C. Mookerjee, ditto	.....	.....	11
„ S. P. Sen, Chandernagore	.....	.....	5
„ T. N. Banerjee, Calcutta	.....	.....	12
Horree Malee, Nurseryman, Manicktollah	.....	.....	16
Essan Malee, ditto, ditto	.....	.....	27
Dhurmo Dass, Malee, Calcutta	. .	.....	8
Koylash Chunder Bhooang, Seebpore	.....	.....	3
S. K Mirza, Calcutta	.....	.....	10
Shaik Soobeed, Thana Makooah	.....	.....	2
Shaik Abdool, Seebpore	.....	.....	1
Syed Imad Iman, Dinapore	.....	1	6
Shaik Nobimuddin Mally, Metiabrooj	.....	1	18
Total ...	31	405	46,104

APPENDIX III.

Statement of seeds received from 1st April 1886 to 31st March 1887.

From whom received.	Number of parcels or packets.
W. T. Thiselton Dyer, Esq., F.R.S., C.M.G., Director, Royal Garden, Kew, London	41
Dr. Regel, Imperial Garden, St Petersburgh, Russia ...	119
Botanic Garden, Jamaica	7
Ditto, Natal, Africa	18
Ditto, Hong-Kong	12
Ditto, Demerara	7
Ditto, Tasmania	25
Ditto, Penang	1
Ditto, Singapore	18
Ditto, Buitenzorg	1
Ditto, Sydney	12
Ditto, Peradeniya	2
Ditto, Berlin	1
Ditto, Saharanpur	95
Sir Ferdinand Von Muller, F.R.S., Melbourne, Australia ...	5
Messrs. Haage and Schmidt, Erfurt, Prussia	180
Jardin des Plantes, Paris	1
Secretary to the Acclimatisation Society, Brisbane, Queensland	7
P. W. Reasoner, Esq., Manatee, Florida, United States, America	80
Hon'ble J. B. Thurston, C.M.G., Governor of Fiji	3
Superintendent, Horticultural Garden, Lucknow	49
Conservator of Forests, Madras	11
Deputy Conservator of Forests, Cuddapah	2
Captain Sanders, S. S. *Rajputana*	3
Herr H. H. Kunstler, Thaiping, Laroot, Perak	1
E. H. Man, Esq., Port Blair	8
A. F. Dowling, Esq., Chittagong	2
Colonel M. Clementi, Simla	1
Collector of Ganjam	1
Secretary to the Agri-Horticultural Society's Garden, Madras	8
A. Jamieson, Esq., Ootacamund	1
Colonel R. S. Jago, Deputy Commissioner of Forests, Ootacamund	1
J. Gammie, Esq., Mungpoo	19
J. L. Lister, Esq , Kalimpong	5
Reverend G. M. Wilson, Rungyroon	5
Secretary, Agri-Horticultural Society of India	8
C. Maries, Esq., Durbhanga	3
C B. Clarke, Esq., Shillong	2
Reverend A. Campbell, Pokhuria, Manbhoom	3
Messrs. Stanley Price and Company, Calcutta	88
Colonel H. S. Jarrett, Calcutta	2
Badul Khan, Plant Collector	29
Chittagong	2
Babu Bishumbhur Ghose, Taki	14
Total ...	903

APPENDIX IV.

Statement showing seeds distributed from the Royal Botanic Garden during the year 1886-87.

To whom sent.	Number of parcels or packets.
W. T. Thiselton Dyer, Esq., F.R.S., C.M.G., Director, Royal Garden, Kew, London	90
Dr. Regel, Imperial Garden, St. Petersburgh, Russia ...	2
Botanic Garden, Edinburgh	2
Ditto, Cambridge	6
Ditto, Hobart Town, Tasmania	2
Ditto, Brisbane	2
Ditto, Melbourne	2
Ditto, Adelaide	2
Ditto, Utrecht	2
Ditto, Leiden	2
Ditto, Buitenzorg, Java	32
Ditto, Hong-Kong	3
Ditto, Gordon Town, Jamaica	3
Ditto, Singapore	6
Ditto, Peradeniya, Ceylon	10
Ditto, Ootacamund, Madras	1
Ditto, Gunesh Khind, Poona	1
Ditto, Saharanpur	24
Ditto, Darjeeiing	277
Director, Compagnie Continental d'Horticulture, Ghent ...	10
M. Louis Van Houtte, Royal Nursery, ditto ...	10
Mons. Le Directeur, Jardin des Plantes, Paris	2
Secretary to the Municipality, Akyab	1
Ditto, Agri-Horticultural Society, Madras	7
Ditto to the Agri-Horticultural Society of India, Calcutta ...	9
Superintendent, Horticultural Garden, Lucknow	14
Ditto, ditto, Lahore	64
Ditto, Lahore Municipal Garden, ditto	3
William Bull, Esq., F. L. S., Chelsea	65
P. W. Reasoner, Esq., Manatee, Fla., United States, America ...	348
Messrs. James Veitch and Sons, Chelsea	4
,, Haage and Schmidt, Erfurt	1
,, C. P. Williams and Brothers, Ceylon	5
,, D. Cannon and E. Brace, Salbris, France	5
Sir Ferdinand Von Muller, F. R. S., University, Melbourne ...	17
Son Excellence Madame Von Schubert, Wesembery, Russia ...	65
E. F. Mondy, Esq., Ayr, Scotland	115
James Inglis, Esq., Sydney	4
W. G. Head, Esq., Crystal Palace, London	17
R. Derry, Esq , Assistant Conservator of Forests, Malacca ...	1
Deputy Commissioner, Mandalay	5
Ditto, Dhubri, Assam	2
Ditto, Gauhati, ditto	2
Ditto, Sultanpur, Oudh	2
Assistant Commissioner, Lalitpur	1
Commissary of Ordnance, Fort William	16
Conservator of Forests, Moulmein, Burma	1
Ditto, Tenasserim Circle, Burma	1
Ditto, Rangoon, ditto	1
Ditto, Northern Circle, Ootacamund ...	7
Ditto, Nagpur	1
Deputy Conservator, Orissa Division, Cuttack	1
Ditto, Chittagong Division, Rangamati ...	1
Ditto, Chota Nagpur Division, Ranchee ...	1
Offg. Ditto, Nagpur	4
Assistant Conservator of Forests, Gorakhpur	1
E. H. Man, Esq., Andamans	4
C. Maries, Esq , Durbhunga	3
Surgeon-General G. Bidie, C.S.I., Madras	3
M. R. Weld, Esq., Kistna, Madras	12
J. Gammie, Esq., Mungpoo	14
A. F. Dowling, Esq., Chittagong	7
Manager, Joypur Estate, Joypur Hât	1
Ditto, Mourbhunj Raj	1
Honorary Secretary, Outram Institute, Dum-Dum	13

APPENDIX IV—*continued.*

To whom sent.	Number of parcels or packets.
Executive Engineer, Mandalay	2
Ditto, Arrah	1
Assistant Executive Engineer, Kistna	1
Ditto ditto, Sasseram, Shahabad	1
District Engineer, Bhagulpore	1
Local Fund District Engineer, Cocanada	1
Superintendent, Lall Bagh, Bangalore	1
Chairman, Municipal Garden, Karachi	1
Surgeon-General C. D. Madden, Simla	1
Surgeon-Major W. M. Courtney, Rangoon	2
Major C. F. Massy, Punjab	1
„ C H. Scott, R.A., Ichapur	2
„ Band, R.E., Calcutta	9
Lieutenant-Colonel Mitchell, Peshawar	16
Lieutenant Leonard C. Peters, Secunderabad	2
„ M. Shanahan, Mount Abu	2
Colonel J. Upperton, C.B., Meerut	1
„ Kincaid, Sehore	1
„ Perreau, Calcutta	2
T. Cooke, Esq., LL D., &c., Poona	2
Thomas Harris, Esq., Ajmere	11
Reverend Father Dumont, Calcutta	12
G. H. Mayer, Esq., Allahabad	2
Messrs. Carlisles Nephews and Company, Calcutta	1
„ Fox and Aitchison, Ghazipur	1
„ Gillanders, Arbuthnot and Company, Calcutta	1
„ J. S. Rusling Brothers, Malipur	3
„ Schoone, Kilburn and Company, Calcutta	6
„ Stanley Price and Company	134
Rajah of Moorsan, Moorsan Fort	1
Officer in charge, Cantonment Garden, Rangoon	2
Vice-Chairman, Mozufferpore Municipality	1
Goods Superintendent, East Indian Railway, Howrah	2
Political Agent, Deoli	51
Thomas Barnard, Esq., Buxar	2
J. D. Beglar, Esq., Chogdah	1
James H. Burke, Esq., Sirhind	1
Cannon, Esq., Calcutta	41
W. C. Costley, Esq., Sahebgunge	1
D. D. Cruz, Esq., Malabar	1
Ed. Van Cutsem, Esq., Calcutta	5
R. Ellis, Esq, Bahawalpur	2
Signor Gallian, Calcutta	1
W. Grindal, Esq, Chenab	2
J. M. Henry, Esq., Baroda	4
M. Lawrent, Calcutta	118
J. M. Macphial Esq., Bangalore	1
T. J. L. Mayer, Esq, Bannu	37
R. W. S. Mitchell, Esq., Garden Reach	12
Babu H. D. Mittra, Calcutta	2
W. J. Prince, Esq., Banda	1
E. D. Puckle, Esq., Calcutta	16
Mrs. Rickitts, Hoshangabad	1
„ H. H. Risley, Darjeeling	1
R. Robertson, Esq., Mysore	15
J. Robson, Esq., Dalhousie	1
Dr. Theodor Schuchardt. Germany	6
E. J. Selvaistre, Esq., Bijnor	1
Mrs. Sladen, Bareilly	7
C. P. Smith, Esq., Etawah	1
F. J. Smith, Esq., Diamond Harbour	6
R. D. Spedding, Esq., Moradabad	2
Captain Symons, S. S. *Pekin*	320
George Thomas, Esq., Monghyr	1
Dr. W. Wilberforce Dunkley, S. S. *Wooroonga*	70
J. M. Ziffo, Esq., Calcutta	38
Babu Atul Krishna Bose, Belgoriah	1
„ Aubhoy Churn Dey, Thanamakooah	1
„ Bama Churn Paramanik, Nazirgunge	1

APPENDIX IV—*concluded.*

To whom sent.	Number of parcels or packets.
Babu Bishumbhur Ghosh, Taki	14
„ Bhupendra Kumar Roy, Narail	1
„ D. N. Bose, Calcutta	21
„ Durga Das Misra, Sitarampur	4
„ Jadub Chandra Biswas, Calcutta	1
„ Jogindra Nath Chowdhoory, Seebpore	5
„ K. P. Chatterjee, Durbhunga	1
„ Nora Sinha Dutta, Howrah	20
„ R. Maliah, Howrah	1
„ P. Ghosh, Calcutta	1
„ Protap Narayan Singh, Bankoora	1
„ S. P. Chatterjee, Calcutta	40
„ Tacoor Dass Banerjee, Calcutta	61
Kumar Gozendra Narayan, Cooch Behar	1
Raja Upendra Chundra, Narail	1
Assistant Surgeon N. C. Bose, Silchar	5
Lala Brij Nath Holkar	16
Total ...	2,534

E. D'S.—Reg. No. 3080J—325—4-6-87.

MUNICIPAL DEPARTMENT.

MEDICAL.

CALCUTTA, THE 6TH AUGUST 1887.

RESOLUTION.

READ—

The Annual Report of the Royal Botanic Garden, Calcutta, for the year 1886-87.

This being the report for the hundredth year, Dr. King has rightly taken the opportunity of giving a sketch of the history of the institution. The following extract contains an interesting account of the garden since its formation :—

The suggestion to form a Botanic Garden here was first made to the Government in Calcutta in June 1767, by Colonel Robert Kyd, then Superintendent of the Hon'ble Company's Dockyard at Kidderpore. The proposal was favourably entertained by the Governor-General, and its adoption was recommended to the Supreme Board in London during the same month, practical effect being given to it during the following year by the selection, as a site, of a large piece of land immediately below Colonel Kyd's private garden at Shalimar. This piece of land, besides the Botanic Garden as it is now limited, included about fifty acres, which form part of the grounds of the present Engineering College. Colonel Kyd was himself an ardent horticulturist, and he had brought together in his private garden at Shalimar a large collection of exotic plants, chiefly from the Straits. He was therefore very appropriately appointed the first Superintendent of the Botanic Garden which had been founded at his suggestion. Colonel Kyd continued to perform the duties of Superintendent until his death in 1793. On Colonel Kyd's death, Government decided to put the garden under the charge of a special officer who should have no other duty. Dr. William Roxburgh, the Company's Botanist in Madras, was therefore transferred from that Presidency, and was installed at Seebpore in November 1793. No better selection than that of Dr. Roxburgh could have been made. Dr. Roxburgh, for many years prior to his transfer, had been engaged in studying the then little known Flora of the Northern Circars in the Madras Presidency. He was a most ardent and enthusiastic botanist, and a good gardener. Dr. Roxburgh continued to be Superintendent until 1814, when he was obliged to proceed to the Cape on account of his health. From the Cape he went on to St. Helena, and from thence to England, where he died during the following year. Dr. Roxburgh was the first botanist who attempted to draw up a systematic account of the plants of India. During his busy life in this country he prepared a *Flora Indica*, which contained systematic descriptions of all the indigenous plants known to him, as well as of many exotics then in cultivation in the neighbourhood of Calcutta. The manuscript of this work he took with him when he left India, intending to publish it during his residence in England. His death prevented the execution of this plan ; and, with the exception of the first volume, which was printed with some additions and interpolations by Drs. Wallich and Carey in 1820, the book remained unpublished until 1832. In the latter year it was printed, exactly as the author had left it, by the piety of his sons, Captains James and Bruce Roxburgh, neither of whom was a botanist. This book is the basis of all subsequent Indian botanical works. It is an admirable production, the descriptions are accurate and graphic, and its authorship justly entitles Roxburgh to his title of the Father of Indian Botany. Until the year 1872, when the publication of the "Flora of British India" was begun by the distinguished botanist Sir Joseph Hooker, Roxburgh's was the only single book through which a knowledge of Indian plants could be acquired. A second edition of this excellent manual was issued by Mr. C. B. Clarke in 1874 at a merely nominal price, Mr. Clarke's desire being to put the book within the reach of the poorest student. Besides the *Flora Indica*, Roxburgh published, at the expense of the Hon'ble Company, in three large folio volumes, his *Plantæ Coromandelianæ*, being descriptions with figures of three hundred of the most striking plants of the Coromandel Coast. Dr. Roxburgh was immediately succeeded in the Superintendentship of the Garden by Dr. Francis Buchanan (afterwards Hamilton), who at the time was on special duty in connection with an extended enquiry into the agriculture of India and in the collection ~~of~~ materials for a Gazetteer. Dr. Hamilton, who was an accomplished botanist and zoologist, collected a vast mass of material, part of which was published in his own name, but the bulk of which, after many years' suppression, was published under the title of Montgomery Martin's History, Topography and Statistics of Eastern India. Dr. Buchanan Hamilton held charge of the garden for only a short time, and he was succeeded in 1817 by Dr. Nathanial Wallich, lately Surgeon to the Danish Settlement at Serampore. Dr. Wallich was an able and most energetic botanist, and during the earlier part of his term of office he organised collecting expeditions into the remote and then little known regions of Kumaon, Nepal, Silhet, Tenasserim, Penang, and Singapore. Dr. Wallich in fact undertook a botanical survey of a large part of the Indian Empire. The materials (in the shape of dried specimens of plants) thus accumulated were taken by Dr. Wallich to London, and, after being named there by himself and by other botanists, they were distributed in numbered collections to the leading botanical institutions in Europe. In this great distribution, Dr. Wallich included the collections of several other botanists which had been made over to him for the purpose. The

liberality with which these specimens was given away was so extreme that, in the garden report for the year 1843, we find Dr. Griffith (who had been appointed to officiate for Dr. Wallich during his absence in England) complaining that the herbarium had been completely denuded of every specimen collected during the first fifty years of the existence of the garden. Besides distributing these enormous collections, Dr. Wallich was enabled, through the munificence of the Hon'ble Company, to publish, under the title *Plantæ Asiaticæ Rariores*, three superb volumes illustrated by coloured figures of a high degree of excellence. Dr. Wallich retired in 1846 and died in 1854. During the lengthened absences of Dr. Wallich in Europe, his place at the garden was filled by Dr. W. Griffith, whose premature death deprived Botanical Science of one of its ablest and most industrious votaries. Dr. Griffith's extensive notes and numerous drawings were, after his death, published by Government in nine volumes. Dr. Wallich was succeeded by Dr. Hugh Falconer. Dr. Falconer was a Palæontologist, well known by his researches on the Sivalik Fossil Mammalia. In 1855 he left the country on account of ill-health, and was succeeded as Superintendent by Dr. Thomas Thomson, a traveller and botanist of much ability, the coadjutor of Sir Joseph Hooker in the collection and distribution of an extensive and well-known herbarium of East Indian plants, and the joint author of the first volume of a new *Flora Indica*. Dr. Thomson retired in 1861, and was succeeded by Dr. Thomas Anderson, whose untimely death in 1870 was caused by disease contracted during his efforts for the introduction of the quinine-yielding Cinchonas into the Sikkim Himalaya. For the two years subsequent to Dr. Anderson's departure from India, Mr. C. B. Clarke acted as Superintendent, and during his incumbency he began the series of botanical publications which has earned for him so high a scientific reputation.

2. From the first foundation of the garden, it was understood that it was to be made a source of botanical information for the possessions of the Company, and at the same time a centre to which exotic plants of economic interest could be imported for experimental cultivation, and from which, in turn, they could be issued for distribution in the Company's possessions. It was also intended to assist in introducing indigenous Indian products to new markets. It was intended that it should not only be a botanical, but also a horticultural and agricultural garden. The preceding paragraph shows how the botanical work laid out for the garden has been accomplished. But the economic side has by no means been neglected. At first great hopes were entertained that the spices which rendered the trade of the Company with the Moluccas and other of the Malayan Islands so valuable, might be cultivated in Bengal. The earliest efforts of Colonel Kyd were therefore directed to the introduction of the trees which yield nutmegs, cloves and cinnamon, and of the pepper vines. It was, however, speedily proved that the climate of Northern India is quite unsuited to these equatorial species. The equatorial fruits, such as mangosteen, langsat, dukko and bread-fruit, were also tried with a similar result; and so were the temperate fruits of Europe. In fact, no small part of the benefits conferred on the country by the garden in its early days was the demonstration by practical experiment that certain natural products, many of them of a most desirable kind, cannot be grown in Bengal; much money and bootless effort being thus saved to the country. The introduction of exotic timber trees also received early attention; and in the garden there still remain a few of the orginal mahogany trees introduced in these early years. The introduction of tea was one of the items put down in Colonel Kyd's original programme; and in the final establishment of what has now become one of the most important industries in Northern India, the garden bore a most important part. Potato-growing was introduced through its agency, and the cultivation of the quinine-yielding Cinchonas of the Andes was initiated and carried to a successful issue under the direction of Superintendents of this garden. In the improvement of Indian cotton, and in the introduction both of that and of jute to the markets of Europe, the garden authorities worked cordially hand in hand with the Agri-Horticultural Society of India, with what success it is unnecessary to point out. By the introduction of some of the best kinds of sugarcane from the West Indies, and the dissemination of these to all parts of the country, a considerable improvement was effected both on the quality and quantity of the sugar crop of the country. In this matter also the Agri-Horticultural Society worked hand in hand with the garden authorities. Very soon after the establishment of the Society just mentioned, a considerable piece of land in the garden was made over to it rent-free, and on this land the Society conducted the greater part of its operations for forty years. In fact, it was not until the year 1872 that the Society's garden was transferred to its present site in Alipore. It is unnecessary to discuss in detail the numerous experiments in the cultivation of economic plants which have been conducted in the garden since its beginning. A few of the products tried may simply be mentioned. Chief among these are flax, hemp, tobacco, henbane, vanilla, coffee (Arabian and Liberian), cocoa, ipecacuanha, aloes, sarsaparilla, jalap, india-rubber, cardamoms, tapioca, and coca. As regards horticulture, it may suffice to say that a large proportion of the kinds of exotic plants now found in private gardens in India has been introduced to the country through the agency of this garden, and that the improved methods of cultivation which now obtain were to a great extent initiated here.

3. In 1820 about fifty acres of land belonging to the garden were made over by Government to the Society for the Propagation of Christian Knowledge, and on this land the Society founded the institution so long known as Bishop's College, but since 1880 (owing to its retransfer to Government) as the Government Engineering College. In the year 1864 the garden was devastated by a cyclonic storm of extraordinary violence, which either uprooted or broke to pieces the majority of the trees in it, and, by blowing down all the plant-houses, hopelessly crushed their contents. The few trees which escaped on that occasion were sadly

reduced in number by a second cyclone which passed over the garden in 1867; and, at the present time, almost the only trees dating from before 1867 are the great banyan and a smaller tree of the same sort, some peepuls and country almonds, about twenty mahogany trees, and some palms. It is almost a pity that the occasion of its destruction by these cyclones was not taken to remove the garden to a site on the Calcutta side of the Hooghly. For, although there are certain advantages in the garden being so remote from the town, there can be little doubt that the balance is in favour of a site more easily accessible to the residents of Calcutta. The destruction of all shade, which resulted from the removal of the trees, allowed the inveterate weed known popularly as ooloo grass, and botanically as *Imperata cylindrica*, to take possession of the whole of the ground not occupied by roads or flower borders; so that when I took charge of the garden in 1871 it presented rather a sorry appearance. The liberality of the local Government, under whose control it soon thereafter passed, has made it possible for me to lay out the garden entirely anew. The whole of its area has since that date been treated for landscape effects, sheets of ornamental water having been formed, and, with the earth so obtained, undulations having been thrown up. New roads and footpaths have also been made; a building for the Herbarium and three handsome conservatories for the more delicate kinds of living plants have been erected; nursery buildings have been put up; and the garden staff have been furnished with comfortable houses.

4. Botanically the most important feature in the garden is its Herbarium, or collection of dried plants. As has already been explained, all the collections prior to Dr. Wallich's visit to England in 1828 were distributed by him to scientific institutions abroad. The commencement of the present collection dates, therefore, from his return to India in 1832. It consists of plants contributed by almost every worker at Botany in India since that date, and of considerable contributions from Botanists in Europe. It is first and foremost an Indian Herbarium, but the plants of South-Eastern Asia, of Japan, of Persia and of Asia Minor are fairly well represented. Those of Europe are also excellently represented; but in African and American plants the collection is comparatively poor. Constant communication and interchange of specimens have been kept up for the last fifty years with the great national collection at Kew; and to the distinguished Directors of that institution, Sir William Hooker and his son and successor Sir Joseph, the Calcutta Herbarium is indebted for invaluable contributions. Interchanges have also been kept up with other European Botanic Institutions, such as the Herbarium of the British Museum, of the *Jardin des Plantes*, Paris, the Imperial Gardens at St. Petersburg and Berlin, the Royal Botanic Gardens at Buitenzorg in Java, at Peradeniya in Ceylon, and at Saharanpore; and with many other institutions. Amongst the private contributors in past times from whom the Herbarium has received the most valuable collections must be mentioned Vicary, Edgeworth, Griffith, Wight, Simons, Law, Gibson, Stocks, Dulzell, Kurz, Miquel, and Maingay. The most important contributions received during recent years have been duly mentioned in my annual report.

The transformation which has taken place in the aspect of the garden has been the work of Dr. King himself, whose skill, taste and assiduity were fully recognized by Sir Ashley Eden and supported by him with liberal grants of money. The garden is now in its scientific capacity admittedly the first of all botanical institutions in Asia, and has been designated by high authority the Kew of the East.

2. Valuable additions were made to the collection of dried plants in the herbarium during the year. The chief contributors were Dr. Aitchison, of the Afghan Boundary Commission; Mr. Thisleton Dyer, Director of the Botanical Garden at Kew; Dr. Gills; Dr. G. Watt; Dr. Rigel, of the Imperial Garden at St. Petersburgh; Mr. Medley Wood, of the Botanic Garden, Durban; Mr. Pringle; Mr. H. O. Forbes; Dr. Prain, Curator of the Herbarium, Royal Botanic Garden, Seebpore; Mr. Gustav Mann; Mr. J. F. Duthee; Colonel H. Collett, C.B., of Saharunpore; Reverned J. Campbell, of Manbhoom; and Mr. J. S. Gamble, Conservator of Forests. Four hundred named species were received from Mexico, and three excellent named collections were sent by Mr. Medley Wood from Natal.

3. During the year 8,064 plants were received and 46,104 were issued. Nine hundred and three packets of seeds were received and 2,534 packets were distributed. The plants and seeds were distributed chiefly to Botanical Gardens, Forest Officers, District Officers, and Officers of the Public Works Department. A large quantity was also supplied to private individuals. The principal contributors were the Superintendents of the several Botanical Gardens.

4. Dr. King was engaged for some time in preparing a Monograph on "The species of Ficus of the Indo-Malayan and Chinese Countries." The first part of this valuable work has evoked strong approbation from scientific men and bodies, and the Lieutenant-Governor has had pleasure in directing that copies of it be supplied to the great Botanical Institutions of the world.

5. The Lloyd Botanic Garden at Darjeeling was under the charge of Mr. Kennedy. A lease has been obtained of the plot of land between the Botanic Garden and the Eden Sanitarium. This land is being used as a vegetable garden, and is under the charge of the Superintendent of the Botanic Garden. The acclimatised English potatoes have proved a failure, and the experiment made by private growers has also been unsuccessful.

6. A sum of Rs. 1,373 was realized by the sale of surplus plants at the Calcutta garden, and Rs. 1,180 by the sale of produce of the Darjeeling garden.

ORDER.—Ordered that a copy of this Resolution and of the Report be submitted to the Government of India, in the Revenue and Agricultural Department, for information.

Ordered also that a copy of this Resolution be forwarded to the Superintendent of the Botanical Gardens for information.

By order of the Lieutenant-Governor of Bengal,

COLMAN MACAULAY,

Secretary to the Government of Bengal.

No. 3484.

COPY forwarded to the Superintendent of the Botanical Gardens, Calcutta, for information.

By order of the Lieutenant-Governor of Bengal,

L. P. SHIRRES,

Offg. Under-Secretary to the Govt. of Bengal.

CALCUTTA,
The 6th August 1887.

H. P.—Reg. No. 4502C—433—12-8 87.